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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,013	12/19/2001	Yong Il Doh	8733.477.00	1523

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EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/021,013	DOH, YONG II <i>eb</i>	
	Examiner	Art Unit	
	Sylvia R MacArthur	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 20-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lo (US 5,779,927).

Regarding claim 1: Lo teaches an etching bath 33, an etching recycling part as illustrated in Fig. 3 and discussed in col.3 lines 63-65. Lo also teaches a DI 35 and undiluted etchant supply 38, an etchant mixing part 37 and an etchant heating part 45.

Regarding claim 2: The heater 45 of Lo heats the mixed etchant to a temperature higher than the room temperature as cited in col.4 line 43. “All etching was performed at a temperature of 130 deg. C”.

Regarding claim 8: Fig. 3 illustrates a tube is connected to the etching bath, the etchant recycling part, the etchant mixing part and the etchant heating part.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong (US 6, 228,211) in view of Lo.

Regarding claims 1, 2, and 12: Jeong teaches an etchant bath, an etchant recycling part as illustrated in Fig. 1, a DI 13 and undiluted etchant supply 14, an etchant mixing part 7.

Jeong fails to teach the etching heating part.

Lo teaches an etching heating part 45.

The motivation to provide a heater is to ensure that the etchant enters the bath at the desired temperature.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a heater for the mixed etchant.

Regarding claim 2: The heater 45 of Lo heats the mixed etchant to a temperature higher than the room temperature as cited in col.4 line 43. "All etching was performed at a temperature of 130 deg. C".

Regarding claims 3 and 18: Jeong teaches a container 1, a bubble plate 3 which is located at the lower portion of the container and generates bubbles using a supplied gas. A gas supply tube 6 is connected to the bubble plate and temperature-measuring unit 19 is located within the container.

Regarding claim 4: N₂ is the gas used with the bubble plate.

Regarding claims 5 and 17: Buffer tank 12 is a storage tank and filter 9 is provided.

Regarding claim 6: A cooling water is provided in the etchant mixing part.

Regarding claims 7 and 15: Element 15 is the concentration measuring unit.

Regarding claims 8 and 14: Fig. 3 of Lo illustrates a tube is connected to the etching bath, the etchant recycling part, the etchant mixing part and the etchant heating part.

The motivation to provide a tube that connects the bath recycling part, mixing part, and heating part is to maintain the temperature of the etchant and ensure it reaches the bath at the desired temperature. Thus, enhancing the temperature control.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a tube that connects the bath recycling part, mixing part, and heating part.

Regarding claim 9: Pump 17 is provided by Jeong.

Regarding claims 10 and 19: The etchant is HF according to Fig. 1 of Jeong.

Regarding claims 13 and 16: Jeong teaches an etchant bath, an etchant recycling part as illustrated in Fig. 1, a DI 13 and undiluted etchant supply 14, an etchant mixing part 7.

Conclusion

Response to Arguments

5. Applicant's arguments filed 4/14/2004 have been fully considered but they are not persuasive.

a. The applicant argues that the intended use of Lo is different from that of Jeong such that that the motivation to combine the references comes from the present invention. The preamble is not given patentable weight, especially in the case of an intended use. The apparatus is what it is and not what it does. In response to applicant's argument that the references fail to

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show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., for etching glass substrates for a liquid crystal display) are not recited in the rejected claims 1 and 12. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Note that this is in the preamble.

b. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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Sylvia MacArthur
Patent Examiner
Art Unit 1763

Smack
April 28, 2004

P. Hassoncel
Primary Examiner
AU 1763